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Compact Java binaries for embedded systems

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ABSTRACT

Embedded systems bring special purpose computing power to consumer electronics devices players and pagers. Java is being aggressively targeted at such systems with initiatives such as Micro Edition, which introduces certain efficiency optimizations to the Java Virtual Machine. It is identified as an important future goal for ensuring Java's success on embedded systems [20]. Processing power and timing constraints often make traditional compression techniques unsuitable, as they must meet the conflicting requirements of size reduction and execution performance. We propose a file format for Java binaries that achieve significant size reduction with little or no performance loss. Experiments conducted on several large Java class libraries show a typical 25% size reduction for class files compared to the standard JAR file format.

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Note: OCR errors may be found in this Reference List extracted from the full text article. AC complete List rather than only correct and linked references.

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INDEX TERMS

Primary Classification:

- E. Data
- ↳ E.4 CODING AND INFORMATION THEORY
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Additional Classification:

- D. Software
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 - ↳ Nouns: Java
- ↳ D.4 OPERATING SYSTEMS
 - ↳ D.4.7 Organization and Design
 - ↳ Subjects: Real-time systems and embedded systems

General Terms:

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